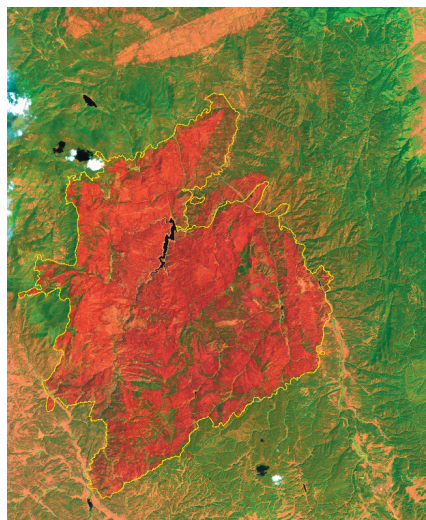


Post-Wildfire Hazard Reconnaissance Maps

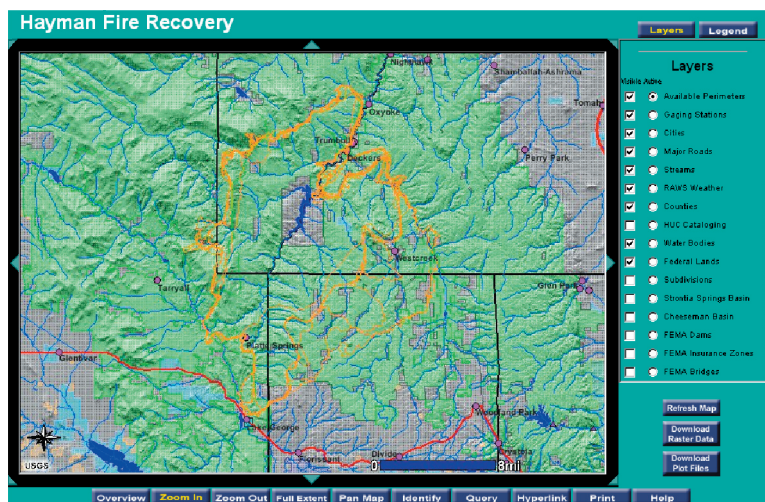
Overview

As part of a statewide emergency management and response assessment for the Colorado wildfires of 2002, the USGS was tasked by Federal Emergency Management Agency (FEMA) and its collaborators to construct maps covering 16 of the most critical wildfire incidents. These initial products, called Post Wildfire Hazard Reconnaissance Maps, were used to assess the potential hazards related to the individual wildfire sites in order to arrive at a categorization for more detailed hydrologic analysis.



Above - Landsat Image of Hayman Burn Severity

The Post Wildfire Hazards Interagency Group asked for the rapid development of a prototype



to ascertain its suitability for further use. The approach selected was to assemble a variety of pertinent geo-spatial data sets in a Geographic Information System (GIS) from which a variety of map and statistical products could be constructed and delivered.

The prototype map depicted the fire burn perimeter and burn severity data (provided by the U.S. Forest Service (USFS) and the USGS) overlain on topographic and planimetric base information. The purpose of the map was to show the location and proximity of the burn site to a variety of natural and man-made features and infrastructure. Furthermore, the combination of topographic, hydrographic information, and burn severity data provided the risk assessment team with key visual indicators of

potential risk/damage to man made infrastructure from flood and erosional processes. Sixteen wildfire sites were created and distributed to FEMA, the Colorado Water Conservation Board (CWCB), and the Colorado Office of Emergency Management (OEM) within two weeks.

Data sets for the creation of the GIS and the reconnaissance maps came from a variety of sources, including FEMA, local counties, the USFS, and the USGS. The data sets include the following:

- Digital Raster Graphics (DRGs), with updated transportation and structures from 1999 DOQs
- Digital Elevation Models (DEMs, 10-meter and 30-meter) and derived products including slope, aspect, and shaded relief

- Hydrologic Unit Catalogs
- Subdivision perimeters and name
- FIRM (Flood Insurance Rate Maps) index information
- Burn perimeters
- Burn severity data
- Potential Hazard Areas

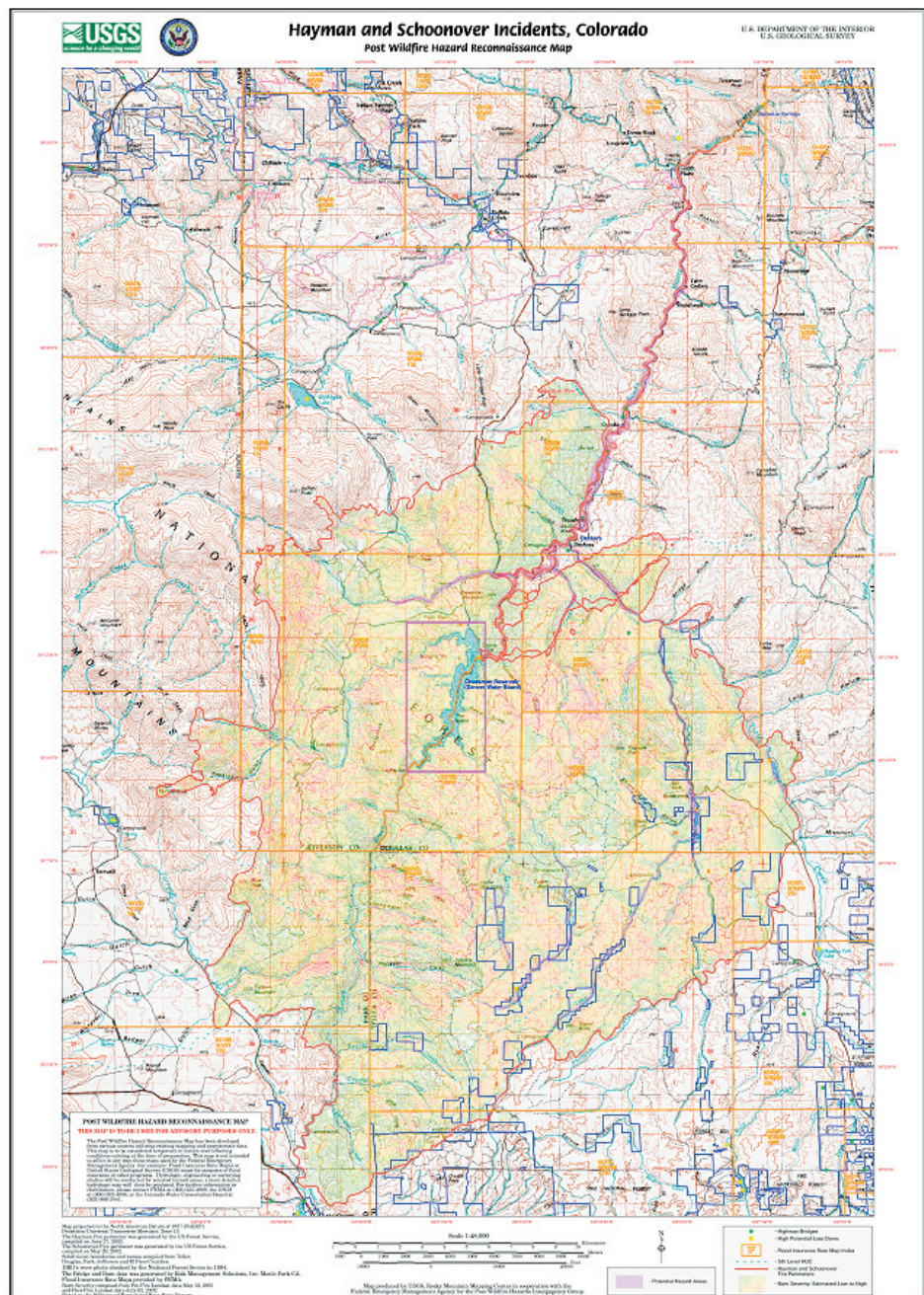
The next phase of the assessment is a detailed hydrologic analysis of the sites categorized as potential high risks. Another more detailed set of maps will be produced for these high-risk areas.

In anticipation of continuing studies in these areas over the next few years, the USGS is gathering additional data to support hazards identification and recovery activities. Focusing first on the Hayman site, the USGS will acquire Interferometric Synthetic Aperture Radar (IFSAR) at 5-meter resolution over the Hayman site and produce 10-meter DEMs over the affected drainage basins to aid in hydrologic and hydraulic modeling.

For More Information

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Above - Representation of the Hayman Post-Wildfire Hazard Reconnaissance Map